

**AMENDMENTS TO THE CLAIMS**

The following listing of claims will replace all prior versions, and listings, of claims in the application.

Claims 1-2. (Cancelled)

Claim 3. (Currently amended) A method for detection and diagnosis of ovarian cancer comprising:

measuring by mass spectroscopy at least one protein biomarker in a subject blood or tissue sample, wherein the protein markers are selected from:

- Marker I: having a molecular weight of about 8.6 kD
- Marker II: having a molecular weight of about 9.2 kD
- Marker III: having a molecular weight of about 19.8 kD
- Marker IV: having a molecular weight of about 39.8 kD
- Marker V: having a molecular weight of about 54 kD
- Marker VII: having a molecular weight of about 79 kD

and;

correlating the measurement of one or more protein biomarkers with a diagnosis of ovarian cancer, wherein an increase in the levels of one or more of Markers II and III, or a decrease in the levels of one or more of Markers I, IV, V or VII is indicative that the subject has ovarian cancer.

Claim 4. (Original) The method of claim 3 wherein one or more protein biomarkers are used to diagnose ovarian cancer.

Claim 5. (Previously Presented) The method of claim 3 wherein a plurality of the biomarkers are detected.

Claims 6-8. (Cancelled)

Claim 9. (Previously Presented) The method of claim 3 wherein a single biomarker is used in combination with one or more additional cancer biomarkers for diagnosing cancer.

Claim 10. (Previously Presented) The method of claim 3 wherein a plurality of the markers are used in combination with one or more additional cancer markers for diagnosing cancer.

Claim 11. (Previously Presented) The method of claim 9 or 10 wherein the additional cancer markers are ovarian cancer markers for diagnosing ovarian cancer.

Claim 12. (Previously Presented) The method of 11 wherein the additional ovarian cancer marker is CA 125.

Claims 13-33. (Cancelled)

Claim 34. (Previously Presented) The method of claim 3 wherein one or more of the markers are detected using laser desorption/ionization mass spectrometry, comprising:  
providing a probe adapted for use with a mass spectrometer comprising an adsorbent attached thereto;  
contacting the subject sample with the adsorbent, and;  
desorbing and ionizing the marker or markers from the probe and detecting the deionized/ionized markers with the mass spectrometer.

Claims 35-38. (Cancelled)

Claim 39. (Previously Presented) The method of claim 3 wherein at least one or more protein biomarkers are detected using immunoassays.

Claim 40. (Currently amended) A process for purification of a biomarker, comprising fractionating a blood or tissue sample comprising one or more protein biomarkers by size-exclusion chromatography and collecting a fraction that includes the one or more biomarker; and/or fractionating a sample comprising the one or more biomarkers by anion exchange chromatography and collecting a fraction that includes the one or more biomarkers.

Claims 41-61. (Cancelled)

Claim 62. (Previously Presented) The method of claim 3 wherein the stage of ovarian cancer is assessed.

Claims 63-84. (Cancelled)

85. (New) A method for detection and diagnosis of ovarian cancer comprising:  
measuring by mass spectroscopy Marker II having a molecular weight of about 9.2 kD and Marker VII having a molecular weight of about 79 kD in a subject blood or tissue sample, and correlating the measurement with a diagnosis of ovarian cancer, wherein an increase in the level of Markers II and a decrease in the level of Marker VII is indicative that the subject has ovarian cancer.

86. (New) The method of claim 85, further comprising measuring by mass spectroscopy at least one additional protein marker selected from:

Marker I:	having a molecular weight of about 8.6 kD
Marker III:	having a molecular weight of about 19.8 kD
Marker IV:	having a molecular weight of about 39.8 kD
Marker V:	having a molecular weight of about 54 kD

87. (New) The method of claim 85, further comprising measuring the level of CA 125.